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Article (Accepted version)
(Refereed)

Original citation:

Leunig, Tim and van Lottum, Jelle and Poulsen, Bo (2018) Surprisingly gentle confinement: British treatment of Danish and Norwegian prisoners of war during the napoleonic wars. *Scandinavian Economic History Review*. pp. 1-16. ISSN 0358-5522
DOI: [10.1080/03585522.2018.1516235](https://doi.org/10.1080/03585522.2018.1516235)

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Available in LSE Research Online: October 2018

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Article in *Scandinavian Economic History Review* · September 2018

DOI: 10.1080/03585522.2018.1516235

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Surprisingly gentle confinement: British treatment of Danish and Norwegian prisoners of war during the Napoleonic Wars*

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Keywords: maritime history; demographic history; history of war; scandinavian history

JEL-codes: N330; J10; N73

Abstract:

The Napoleonic Wars saw the British capture and incarcerate thousands of sailors in disused Royal Navy ships, the so-called prison hulks. Many Danes and Norwegians – navy personnel, privateers and merchant sailors– were thus interred. This article uses a new data source, the official record books kept in the National Archive at Kew, to test whether the prison hulks were as bad as popular perception might suggest. In doing so, we provide the first rigorous quantitative assessment of the Danish and Norwegian sailors’ prisoner experience. We find that death rates were surprisingly low, suggesting the quantity and quality of food and medical care was reasonable. Prison hulks were not “floating tombs”. The records also show which prisoners were released and exchanged, and when. Officers did well, reflecting the age old system of a gentleman’s honour. Privateers did worse than merchant sailors: those who took up arms were likely to serve longer as prisoners.

* The authors would like to thank Bruno Ansbjerg and Aske Brock for their transcripts of the datasets for the Danish prisoners. A previous version of this paper was presented and discussed at the 2015 maritime history class at Aalborg University, and we are particularly grateful for stimulating discussion with history students Nicolaj Andersen, Martin Brassøe, Ditte Bieber Jensen and Alberthe Bau Rosengren.

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1. Introduction

For most of history, life as a prisoner of war was nasty, brutish and short. Prisoners could be treated as slaves, to be worked, sold or killed at will. Only the lucky rich could be hoped to be ransomed. The first big step forward was the 1648 Treaty of Westphalia, which allowed prisoners to return home without ransom at the end of a war. It said nothing, however, about their treatment when in captivity. The first regulation as to the treatment of prisoners while in captivity was Lincoln's Lieber Code of 1863, written midway through the American Civil War. It went on to become the basis of the Hague conventions of 1899 and 1907, as well as the Geneva Conventions of 1929 and 1949 (Costa & Kahn, 2008). For prisoners in the Napoleonic era, therefore, there were no legal or informal conventions as to how they could be treated. The way they were treated, and their likelihood of survival, was very much up to those into whose hands they fell.

This article looks at the treatment of Danish and Norwegian sailors captured by the British in the Napoleonic era. The British navy had attacked Copenhagen, taken the Danish navy fleet and defeated the Danes thoroughly, albeit without formally declaring war. Denmark (whose empire included Norway at this point), was a third rate European power and one of the last neutral countries in Europe by 1807, but its navy was a significant prize to be taken by either Napoleon or Britain, who both wooed the strategically important entrance to the Baltic Sea

through the Danish straits. Unlike the French however, Denmark-Norway was hardly an arch enemy of the British, but in the face of two ultimate demands from France and Britain respectively, the Danish king sided with Napoleon's empire in the aftermath of what became known as the Battle of Copenhagen. With regards the prisoners of war entering British captivity from late 1807 onwards, most of them were merchant sailors, rather than fighting men at sea to attack the British. It is noteworthy that all captives, civilian as well as military, were treated as prisoners in this era. The notion that only military captives are prisoners of war is a more recent development. Against that, looking after prisoners is costly. They need to be fed, accommodated, and their healthcare needs attended to. Groups in close confinement have always been prone to the spread of disease, implying high death rates. And while most captured Danes were merchant sailors, not all had benign reasons to be at sea. Some were in the Danish navy, while others were privateers, licenced by the Danish crown to harass and capture British vessels.

This article proceeds as follows. We first introduce the Napoleonic wars, setting out the role of England and Denmark-Norway, and emphasising the scale of the conflict. We then go on to say a little more about the treatment of prisoners of war in the early to mid-nineteenth century in general. We will then review the qualitative literature concerning conditions on board prison hulks, and highlight its importance in Danish and Norwegian historiography. We then move onto the substantive contribution of this paper: the first quantitative analysis of the experiences of captured sailors, seeking to explain the duration of their captivity and the likelihood of dying while a prisoner.

In doing so, we will show that the conditions under which captives were held were surprising gentle. The length of captivity was sufficiently long that problems such as insufficient food would have manifested themselves in a death rate far higher than that which we observe. The contrast with, for example, the conditions and outcomes documented in Costa and Hahn's work on American Prisoner of War camps is dramatic.

2. The Revolutionary and Napoleonic wars

The Revolutionary and Napoleonic wars lasted from 1792 until 1815, with a single year of peace in 1802-3. Broadly speaking, these wars saw France fight a changing coalition of European powers, including at different times the British, Austrians, Prussians, Russians, Swedes, Spanish and Portuguese.

These wars were critical to the evolution of modern day Denmark and Norway. The eighteenth century Danish-Norwegian empire was far-reaching. From his capital in Copenhagen, the King could look north to Norway, the Faroe Islands, Iceland and Greenland, west to the Danish West Indies, east to Tranquebar in India, and south to Schleswig-Holstein, and part of present day Ghana. Denmark and Norway were the core of the empire. They were economically well-integrated, with Denmark producing grain, and Norway timber and fish. The outbreak of the revolutionary wars created an unprecedented economic boom for the neutral Danish-Norwegian state. Freight rates soared and Denmark-Norway successfully traded with everyone, supported by their navy upholding a policy of armed neutrality. The French conquest of Prussia led England to fear that Denmark-Norway – and with it sea access to the Baltic, crucial for grain and timber – would fall to Napoleon. The British offered Denmark-Norway an alliance, while Napoleon threatened to invade unless Denmark-Norway joined the alliance against England. The Danes did neither, and the British besieged Copenhagen in 1807, capturing the Danish and Norwegian fleets. Thus Denmark and Norway became England's enemy and Napoleon's ally. It remained so until the end of the war (Munch-Petersen, 2007).

Napoleon lost the war, and the 1814 Treaty of Kiel broke up the more than 400-year old Danish-Norwegian empire. Norway was given to Denmark's old enemy Sweden, although rebellion in Norway meant that it joined Sweden in a union, rather than as a territory. This was an important stepping stone in Norway's progress to becoming an independent nation, which it achieved peacefully in 1905. Denmark became a fourth rate European power, creating the modern day notion of Denmark as a small and peace-seeking nation state.

The Napoleonic wars were larger than any conflict seen before. The armies were larger than ever before – the French army, for example, peaked at 2,500,000 soldiers (Kennedy, 2004; pp. 128-29), more than five times the peak size of the armies of the Roman Empire (MacMullen, 1979). The French introduced universal conscription, while the British taxed and borrowed at unprecedented levels (Stoker et al., 2014; Knight 2013). Whether by conscription or taxation, the war touched far more families than earlier wars, and proved surprisingly popular. Nationalism and militarism became common, and sowed the seeds for the creation of nation states such as Germany and Italy, and for future major conflicts culminating in two world wars (Bell, 2008).

England fought the Danish-Norwegian empire at sea rather than on land. British ships seized Danish military and mercantile shipping. Commanders had an incentive to capture rather than sink vessels, owing to the well-known 'prize rules' which made them and their crew rich from the value of the captured ships (Petrie, 1999). The British disrupted trade between Denmark and Norway sufficiently to cause severe shortage of grain in parts of Norway. In those places, both starvation and stunting occurred. (Kiil, 1939, pp. 126-35).

The Danish-Norwegian king issued 574 privateer licences to those wishing to capture British vessels. These employed almost 9,000 men. Privateers, mainly small gun boats, could easily capture a lone British merchant ship, whereas convoys of merchant ships were much safer (Bloksgaard, 2009; Feldbæk, 1997). A Danish privateer's crew could become very rich if successful (Bloksgaard, 2009), although this was rare.

The Napoleonic wars saw unprecedented numbers of soldiers and sailors captured. Hundreds of thousands were captured by Napoleon's lightning strikes into Italy, Prussia and ultimately Russia, and conversely hundreds of thousands of French soldiers and seamen fell into the hands of their adversaries. There were, for example, over 100,000 French prisoners of war in England alone (Daly 2004). Similarly, the British took 7,000 Danish and Norwegian sailors prisoner. In Norway in particular, the experiences of prisoners of war in England nurtured an important part of Norwegian self-identity, an emancipatory process coming of age during the 19th century (Glenthøj, 2012). For instance in the Agder region of Southern Norway 5-10% of the male population wound up in a British prison between 1807-1814 (Johnsen, 2009, p. 200). As a consequence the subsequent two centuries have witnessed a number of historians and intellectuals commenting on the experience of being imprisoned by the English.

3. Prisoners of War in historic context

Being captured was potentially lethal. "For most of history, soldiers captured by the enemy were either slaughtered or enslaved to die quickly in a mine or galley ship or other lethal

place.” So begins Costa and Kahn’s (2007) seminal article *Surviving Andersonville*, reminding us that being captured was a terrible experience for most of history.

The emergence of the Enlightenment began a long period of almost Whiggish historical development, from an era in which prisoners of war were routinely enslaved, to one in which the Geneva Conventions govern the treatment of those captured. The first major step forward came in the 1648 Peace of Westphalia, which established the principle that prisoners of war should be released without ransom and allowed to return to their home country at the end of a war.

This period was also characterised by the tradition of ‘parole’, whereby higher officers would surrender their swords and be allowed to live in an open prison, where they could enjoy a fairly large degree of personal freedom. In some cases they were allowed to return to their country, having pledged not to take up arms for the duration of the war.

There were no such conventions for ordinary soldiers and sailors. Although the Treaty of Westphalia said that they were to be allowed to return home at the end of war, it said nothing about the conditions under which they should be kept as captives. The nineteenth century showed why the Geneva Convention would be necessary. Following the Battle of Balién in 1808, Napoleon’s General Dupont surrendered to the Spanish with over 17,000 men. Between a half and six-sevenths of his troops did not survive captivity (Gates, 1986; Chamberlain, 2008). Similarly, the treatment, or lack thereof, of the injured on the battlefield following the 1859 Battle of Solferino led Swiss national Jean-Henri Dunant to author a book that would lead to the creation of the Red Cross four years later. His work also led to the creation of the Geneva Conventions of 1864 (treatment of the wounded), 1929 (covering prisoners of war), and

subsequent revisions. Note however that it was not until 1929 that the appropriate treatment of prisoners of war was set out formally on an international basis. The American civil war saw Lincoln create the first code of conduct for the treatment of prisoners of war. It was, however, frequently ignored. The death rate was 12% in Union Prisoner of War camps, and 16% in those of the Confederacy, despite the fact that the average prisoner was captive for less than a year (Costa & Kahn, 2007). The historiography of early and mid-nineteenth century conflict leads us to expect that the treatment of Danes and Norwegians, captured by the British in the Napoleonic wars, would be abysmal, and perhaps lethal.

4. Living conditions for prisoners of war held by the British in the Napoleonic era

Capture of a ship by the British involved capture of a crew, who became Prisoners of War. This was true for all seamen, merchant navy as well as those serving in the Danish-Norwegian Navy, with no formal distinction. In this era, Prisoners of War held in Britain were the responsibility of the Admiralty Transport Office, presided over by the Commissioners. Danish and Norwegian seamen and lower ranking officers were held on prison ships, commonly known as 'hulks'. Prison ships were commanded by a lieutenant and had a standard complement of staff, many recruited from among the prisoners of war (Chamberlain, 2008, pp. 58-60, 81, 45). The regulations stated that all ships were to have a surgeon, often a captured naval surgeon. The surgeon was also responsible for inspecting food, sanitary conditions, and ensuring sufficient clothing, blankets, etc. Prison ships were usually stationed in groups, with at least one hospital

ship per group. The Transport Office was responsible for ensuring that medical knowledge was shared.

Officially, rations were good. Each week a prisoner was entitled to 2.5lbs of beef (just over 1kg) and 2lb of fish (just under 1kg). This was supplemented by 10.5 lbs of bread, 2lbs of potatoes, 2.5lbs of cabbage, as well as smaller amounts of scotch barley, onions, and salt. They were also given 14 pints (8 litres) of beer (Chamberlain, 2008, pp. 62-5). Prisoners were entitled to a hammock, palliase, blanket, jacket, waistcoat, trousers, two shirts, one pair of stockings and a hat. All were bright yellow, to make both escape and sale harder (Chamberlain 2008, p. 62).

Prisoners had formal rights to form committees to monitor food and other basics. Physical punishment of prisoners was formally discouraged. Those who killed another prisoner would be subject to the full force of English Law. In contrast Marines guarding prisoners were subject to physical punishment, in line with standard Naval approaches to discipline (Chamberlain, 2008, pp. 38, 44).

There can be no guarantee, of course, that regulations and reality are the same. French contemporaries were explicit about the horrors of captivity. For example, Captain Charles Dupin described the prison hulks as 'floating tombs', while Baron de Bonnefoux said that 'It is difficult to imagine a more severe punishment' (both quoted in Chamberlain, 2008, p. 55). In contrast, contemporary British authors defended the treatment given to prisoners. The Transport Official in charge of running the prisons said that "the prisoners were very well treated in every respect: their provisions in good quality, and their clothing sufficient." (Abell, 1914). Neither French nor British authors can be seen as unbiased. Danish prisoners did

complain about the quantity of food, as well as the lack of alcohol and sweets. Formally at least, the food rations were not far from rations on board a Danish navy vessel at the time (Roos, 1953, p. 84). They were also able to supplement their rations. For example, mutton bones were often carved and sold locally to raise money to buy food or other items. Eating meat or fish every day would not have been automatic for the general population in England, Denmark or Norway in this era. This ambivalent attitude of contemporary Norwegians to a period in British captivity is apparent in the famous Norwegian poem, Henrik Ibsen's 1862 *Terje Vigen*. Terje Vigen rows from Norway to Denmark during the Napoleonic Wars to buy grain for his starving family. He is captured and held in a prison hulk. After the war he finds his family dead, and he himself forgotten. Vigen takes a job at sea, and one day rescues an English yacht. The captain recognizes Vigen as the man he had captured. Vigen threatens to take revenge, but changes his mind and forgives them (Johnsen, 1993, p. 7). The feeling of revenge is there, but perhaps it was the treatment in prison that led to forgiveness.

Recent historiography has tried to evaluate living conditions. Patricia Crimmin (1996) concluded that prisoners of war were perceived by the English as prisoners and aliens and sometimes as enemies and potential invaders. In addition they were resented for consuming scarce food, while the native population suffered through the war. Using a biographical approach, Norwegian historian Johnsen argues that conditions for common sailors were characterised by 'suffering, hunger, assaults from wardens, illnesses, crowdedness, idleness and longing.' (Johnsen, 2009, pp. 285-96). In an earlier work (1993, p. 42) Johnsen stated that from a sample of 573 prisoners, 33 of them (5.8%) died while in captivity. 2 of these were shot, while 'fever,' 'coughing,' 'typhus,' 'measles,' 'atrophy' and 'chronical bleeding' were noted as causes

of death. Yet, except for being shot, these would be causes of dying also in a normal situation in the early 1800s, and some would have died anyway.

Whatever the position for common merchant seaman, the literature is clear about three things. First, that, despite formally equal treatment, the British treated captured Danes and Norwegians better than they treated captured French prisoners of war. Second, that captured privateers were treated less well. And third, that officers were treated well. Lloyd for example, commented in 2007 that while conditions were bad for Danish and Norwegian prisoners, the French suffered more. The former were seen more as hostages than prisoners of war (Lloyd, 2007).

While on paper prisoners from different countries were treated similarly, eye witness reports concur with Lloyd's conclusion. This is seen in the most thorough study of the Danish experience, Carl Roos' (1953) *Prisonen*, based on correspondence between Danish and British authorities, as well as on diaries kept by Danish prisoners. The consul general until 1812, Jens Wolff, was the Danish-Norwegian representative representing the interest of the prisoners. A number of written testimonies on his work, suggest that he was not very active in pursuing the interest of the prisoners, but there is no indication that he personally sought to discriminate between the different types of inmates be it navy personel, civilians or privateers. Likewise Hornemann, who succeeded Wolff was not seen to have differentiated in this way, but given the relatively free position of the officers on parole, they were able to pay the consul general visits to his house in London. (Roos, 1953, 163-170.

A clear example of how treatment differed stems from communication between the English Treasury and the Danish consul general as early as 1807, when the Danish authorities

were told that their countrymen would receive twice as much for maintenance as French prisoners of war. A Danish priest, Rosing, who visited prison ships noted that the guards were much stricter with the French (Roos, 1953, p. 29).

By May 1809 the Danish government had struck an agreement with their British counterparts to enable Danish government allowances to be passed on to the imprisoned seamen. Payments ranged from 28 shillings per week for naval officers, to 1 shilling and 2 pence for common sailors. The Danish seaman Jens Krog, who kept a diary, noted that French prisoners did not receive such relief from their government. Neither did Swedish citizens, three of whom were in the same prison ship as Krog himself (Roos, 1953, pp. 90-91).

Not that Danish sailors always appeared grateful. When the French prisoners on a neighbouring prison hulk cheered and flashed lights on Napoleon's birthday, the Danes did likewise. Provocations like this led the British to ban contact between ships (Roos, 1953, p.28).

Nor do all historians accept that the French were treated badly. Chamberlain argues that contemporary French authors had a motive to portray the British as villains, and the French (and others) as 'the innocent victims of the fortune of war' (Chamberlain, 2008, p.55). He sees many historians as confusing conditions on the prison hulks with those on the convict hulks, 'whose conditions were indeed horrendous'. He argues that medical treatment was often effective, noting, for example, successful approaches to treating pneumonia in Stapleton Prison being passed to all prisons in 1807 (Chamberlain, 2008, pp 31, 33-34).

Johnsen notes that privateers received the worst treatment, as they were looked upon as common criminals, rather than bona fide prisoners of war. Bloksgaard (2007) concurs, noting that privateers were regarded as dishonourable.

Officers were unambiguously treated well. Feldbæk (1997), for example, tells the story of skipper Chresten Hansen Mikkelsen, who sketched his cell. This showed him to have fine clothes, decent cutlery, decorative sketches on the walls and even a teapot. An umbrella suggests that he went outside fairly often.

In a similar vein, a Danish naval officer, Hans Birch Dahlerup, was given parole in Reading following a brief stay on a prison hulk. In Reading he had a two room apartment in a house, where the landlady provided him with food. On Sundays he even dined with his hosts. He regularly received government and private funds from Denmark. After a while he rose in the informal ranks in the open prison, assuming the role as spokesman in correspondence between the Danish consul general and the British authorities. In his spare time he studied English language and literature (Roos, 1953, p. 194-196). All this was despite the fact that he had already escaped and rejoined the war against the British. He did so again – before being captured for the third, and final time. He went on to have a successful naval career, rising to be admiral of the Austrian fleet fighting Garibaldi in the Adriatic Sea in 1849 (Jørgensen, 2002).

His experiences seem to have been common for officers in this era, matching the favourable accounts of life on parole for French officers (Daly, 2004, pp. 361-380). Thus, the qualitative evidence points towards differences in the treatment prisoners of war received, by nationality and status.

5. Data

Before we analyse our data, we need to establish that they are fit for purpose. The data are British administrative records held in the British National Archives.[†] The British recorded data about each Danish and Norwegian sailor captured during the Napoleonic Wars. They collected each sailor's name, birth place, age, physical characteristics (height, build, face shape, hair and eye colour), the ship on which they served, the type of ship (man of war, privateer, merchant), their rank, where and when they were captured, the name of the prison and date of arrival there, and the date and reason for leaving prison.

These British data have since been transcribed for Danish and Norwegian use. Danish Genealogist Bruno Ansbjerg transcribed the data for Danish sailors.[‡] The data on Norwegians is available digitally from the Norwegian Data Archive in Bergen. This version did not include data on heights, which we added ourselves from the original manuscript records in Kew.[§] The total estimated number of prisoners from Denmark-Norway is estimated to be c. 7,000 in total, while the total number of prisoner at any given point in time peaked in 1809 with 3,547 prisoners in ten different prison camps (Scheel, 1935, p. 45-46). However, for this analysis we have focused our attention mainly on data from the prison camp of Chatham, East of London, from where particularly rich data, such as height and stature, were recorded in the prison rolls, and this was the prison camp with most Danish and Norwegian inmates. The total number of observations in this analysis is 4,261. 14% of records we investigated are incomplete: 379 prisoners (all

[†] Norwegians: The National Archive (TNA), Admiralty (ADM) 103/60, 103/61, 103/62, 103/63, 103/64, 103/376

[‡] We would like to thank Ansbjerg, who kindly lend us his database consisting of a complete transcription of Danes in English prisons 1807-1814 and Aske Brock for coding the initial dataset.

[§] Digitalarkivet, "Norske Prisonfanger"

<https://filer.digitalarkivet.arkivverket.no/fa22001807.htm>

Norwegian) are recorded as being “transferred” to other prisons: we do not know the final outcomes for these prisoners. 237 records (all Danish) include no date of release. Of these, 10 prisoners have outcomes (4 released, 3 died, 1 exchanged and 2 escaped), while the remaining 227 are recorded as “departure reason not known”.

We need to establish whether the missing observations are statistically problematic. Of the 379 Norwegians transferred to other prisons, 311 were captured in 1807, at the start of the war. The most likely reason for their exclusion is that the record keeping systems were not fully established. The reasons for missing data for Danish prisoners are more mixed. As with Norwegian prisoner data, 66 of the 237 without a date of release were captured at the start of the war. A further 93 captured in 1811 also have no data. This looks like a sloppy clerk: 78 of the missing observations are sequential in the original records (records 1253 &ff).

The height data allows us to see whether the weak were being disposed of, perhaps on the quiet. There is no evidence of this. 47% of sailors captured were in their 20s. Within this group, the Danes who remain in the sample averaged 65.63 inches – exactly the same as those whose records are incomplete. The included Norwegians were 65.55 inches, while the excluded were 65.52, a difference of under a millimetre. The sample looks unbiased, therefore, and consists of 3,645 prisoners, 1,178 Danes and 2,457 Norwegians.

Everyone in the dataset is a man. They vary in age between 8 and 80, with half being between 22 and 35. They were born between 1728 and 1805, with half being born 1780-1790. 1,960 were captured from merchant navy vessels, 746 from privateers, 559 from ‘men of war’, and the remaining 380 from other, including not recorded. A Dane or Norwegian giving their name and place of birth orally to a British person in 1810 does not guarantee an accurate

written record of names, or places of birth. Similarly, old English handwriting is not always straightforward to read, especially as words were often abbreviated. Thankfully the items that interest us – dates of capture and release, reason for release, whether the prisoner was an officer or a common sailor, and their height, are readily comprehensible.

The books were used for fact-finding by the British authorities. Danish inmate Jens Krog for instance, wrote in his diary that some prisoners in Chatham tried to have extra linen and clothes following their transfer from Plymouth. The books were checked for the validity of such requests (Roos 1953, p. 87). This indicates that the record keepers had reason to keep accurate records. The credibility of the entries in the prison registers is what enables the following analysis of the quantifiable aspects of the prison experience.

6. Analysis

Our analysis concerns the fortunes of Danish and Norwegian sailors captured in the Napoleonic Wars. We are interested in their fortunes in aggregate, and whether we can explain the differences in the fortunes of different groups within our prisoners. We concentrate on the duration of captivity, and death in captivity.

We begin, therefore, by setting out the basic facts. Self-evidently, there were no prisoners of war prior to the outbreak of war, and all prisoners had been released by the end of 1814. In between those dates, as Table 1 shows, the number of prisoners first rose, then fell, and then remained steady. The fact that the system held more than 1700 for over a year suggests that the lower numbers towards the end of the war were a deliberate policy choice, rather than a physical constraint.

The vast majority of prisoners were captured at sea from another vessel. Most of the prisoners were taken in waters between the two combatants, i.e. along the Norwegian coastline, in the Danish straits, and in the North Sea and The Channel. Fewer seamen were taken in the Mediterranean, while some were taken into custody as far away as The Caribbean and The Indian Ocean.

Table 1. The number of prisoners at year end

Year	<i>1807</i>	<i>1808</i>	<i>1809</i>	<i>1810</i>	<i>1811</i>	<i>1812</i>	<i>1813</i>	<i>1814</i>
N	1,027	1,773	1,705	1,382	1,374	1,250	1,170	0

Note: that these numbers relate only to prisoners whose exit dates are known. The actual numbers would have been higher. The excluded prisoners entered the prison of war system disproportionately at the start of the period, so it is likely that the 1808-9 peak is understated here.

The records show that average sailor spent 933 days between being seized and being released. This is by no means a short period on which to be incarcerated on a prison hulk. This average, of course, disguises huge variation. The shortest period was just three days, and the longest 2,656 days – more than seven years. The standard deviation is 721. 32 per cent of seamen were still in captivity in 1814, as the war came to an end. This means that more than two prisoners in three were released during the war. Table 2 gives descriptive statistics as to the number of prisoners captured and released in each year.

Table 2: The number of sailors captured and released by year

Released: Captured:	1807	1808	1809	1810	1811	1812	1813	1814	total	days in captivity
1807	61	286	251	82	32	56	111	209	1,088	1,116
1808		125	190	453	122	52	49	166	1,157	913
1809			46	65	55	68	46	139	419	1,056
1810				20	40	22	41	174	297	1,058
1811					35	37	50	154	276	786
1812						13	41	70	124	600
1813							19	258	277	273
1814								4	4	215
Total	61	411	487	620	284	248	357	1,174		
days in captivity	60	226	468	678	761	1074	1,402	1,424		

Note: three people are recorded as being captured prior to 1807. They are excluded from this table.

Reading across the first row of table one, we find that of the sailors captured in 1807, 61 were released in the same year, 286 in 1808, etc. There were 1088 sailors captured in 1807, and they averaged 1116 days in captivity. Similarly, reading down the last substantive column shows that of the 1174 sailors released in 1814, 209 had been captured in 1807, 166 in 1808, etc.

The most common reason for prisoners leaving captivity was that they were released. That said, some escaped, some were exchanged, and some died. Taken as a whole, 3,221 were released, 191 died, 174 were exchanged and 59 escaped (their fates unknown). If we exclude those whose time in captivity ended in 1814 (and as such were released because of the end of the war, rather than because of any decision by the British), then we find that 2,130 were released, 108 died, 174 were exchanged, and 58 escaped. Thus we find that a straightforward release while war was underway was the most likely outcome for any prisoner, accounting for 58% of cases. Next came release at the end of the war, representing 30% of cases. Exchanges and Deaths represented 5% of cases each, while 2% escaped.

In total, 191 of the 3,645 seamen about whom we have full details died in custody. The average number of people in captivity at each year end (1807-1814 inclusive) was 1,210, implying 19.7 deaths per 1000 inmates. This is six times as high as in modern UK jails, who are in turn about a quarter more likely to die than the modern general public.** We do not have any age-specific mortality data for Danes or Norwegians in this era.

As mentioned earlier, this is a radically lower death rate than for Spanish prison hulks, where the majority died. We have no good data on background age specific mortality rates in Denmark or Norway with which to compare this number. The average age of prisoners on arrival was 29, and life expectancy of English men at age 30 in 1750-99 was 32.1 years (Wrigley and Schofield, 1989, p. 252, table 7.21), implying a mortality rate of around 2.2 per cent.†† Given the age profile of prisoners, we can be certain that the age adjusted prisoner death rate

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https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/676144/safety-in-custody-q3-2017.pdf, <https://www.bjs.gov/content/pub/pdf/msp0114st.pdf>

†† $1/(1.0218^{32.1}) = 0.5$

exceeded that of free English men in this era, but the death rates do not seem large enough to support the description of these ships as 'floating tombs' (Chamberlain 2008, Chapter 3).

An average stay of 933 days and a 5% death rate is obviously shockingly high by today's standards, particularly as the population will have been made up by people who were overwhelmingly healthy, prime aged males at the start of their incarceration.

7. Understanding duration

Our data allow us to assess the extent to which the duration in captivity was random, as opposed to varying with nationality, rank, age, or other variables. The existing literature, for example, suggests that throughout history, prison experience has differed by rank. Yet, in spite of a substantial qualitative literature on the history of prisoners of war, this paper presents the first quantitative investigation of differences in treatment received.

We can investigate the causes of duration in captivity, using regression analysis. We seek to explain duration as a function of the date of capture, the distance between place of capture and prison, the status of the sailor, the type of ship, age, age heaping, height, nationality, and the reason that the period of captivity ended. The results are given in table 3.

Table 3. Explaining the duration of captivity

	<i>All</i>		<i>Danish</i>		<i>Norwegian</i>	
	<i>Coefficient</i>	<i>t-stat</i>	<i>Coefficient</i>	<i>t-stat</i>	<i>Coefficient</i>	<i>t-stat</i>
Captured in 1807	351.6	9.13	379.1	5.47	346.6	7.37
Captured in 1808	420.5	11.61	430.3	6.88	424.8	9.20
Captured in 1809	543.9	13.53	453.7	6.45	595.2	12.13
Captured in 1810	675.8	15.56	399.4	5.18	770.4	14.60
Captured in 1811	472.2	10.66	343.7	4.38	536.3	9.89
Captured in 1812	303.0	5.44	260.2	2.38	349.8	5.35
Transit days between capture and custody	0.987	48.78	0.911	25.93	1.040	41.08
Aged 12 or less	-227.4	-2.53	-359.2	-2.00	-180.3	-1.69
Aged 13	210.1	1.15			220.9	1.18
Aged 14	79.63	0.78	181.0	1.01	46.70	0.37
Aged 15	48.95	0.48	-255.3	-1.53	175.5	1.37
Aged 16	217.4	3.25	160.0	1.44	243.7	2.91
Aged 17	114.6	1.84	261.8	2.39	58.81	0.78
Aged 18	58.93	1.30	118.7	1.64	29.48	0.51
Aged 19	4.213	0.08	-17.62	-0.22	26.71	0.43
Aged in 30s	40.31	1.82	31.13	0.86	49.50	1.78
Aged in 40s	70.82	2.44	57.0	1.11	77.86	2.22
Aged 50 or over	-26.66	-0.80	-52.36	-0.88	-21.77	-0.54
Age ends in 0 or 5	11.13	0.55	31.26	0.89	5.266	0.21
Officer	-136.5	-5.55	-145.6	-3.81	-116.8	-3.68
Other ranks	-33.48	-0.96	75.19	1.14	-47.70	-1.07
Craftsman	97.0	1.80	234.1	3.14	-18.45	-0.24
Military or Navy vessel	-110.2	-3.85	-27.72	-0.67	-144.1	-3.54
Privateer	27.46	1.09	187.4	4.14	-18.44	-0.57
Unknown type of vessel	-80.50	-2.56	-155.0	-2.74	-82.09	-2.07
English vessel	-71.10	-0.53	-174.3	-1.17		
Seized on land	-166.7	-1.17	-166.9	-1.20		
Exchanged	-229.9	-5.39	-298.7	-2.59	-182.3	-3.81
Escaped	-155.1	-2.33	-175.3	-1.39	-115.3	-1.46
Died	72.82	1.93	90.02	1.38	68.73	1.50
Height	-11.08	-3.33	-15.36	-2.75	-9.713	-2.35
Danish	-163.4	-8.92				
Constant	1052.1	4.76	1,166.4	3.11	936.1	3.42

Number of observations	3,641		1,188		2,453	
Adjusted R-squared	0.5186		0.4841		0.5361	

Notes: OLS regression. Units: days in captivity. Excluded category: Norwegian, captured 1813, common seaman, merchant vessel, released, no age heaping, aged 20-29. We exclude the 4 sailors captured in 1814, a handful of days before the Treaty of Kiel was signed.

Table 3 shows that we can explain the duration of capture relatively well – the adjusted R2 value is typically around 0.5. The results are broadly stable across the three different regressions.

Taking the sample as a whole, the simple average duration of custody was 933 days. As we would expect, those captured at the end of the war were held in custody for the shortest period, with those taken prisoner prior to 1813 (our omitted category) all having positive coefficients. . If all prisoners were held until the end of the war, the dummy variables on year of capture would rise by 365 for each year prior to 1813, less some allowance for deaths and escapes, and some statistical noise to reflect the fact that prisoners are not captured evenly throughout the year. This would mean that 1812 would take a value of around 365, 1811 a value of around 730, and so on. The value for 1812 – 303 – is not too far adrift, suggesting that those captured in 1812 were largely held until the end of the war. This is in line with the descriptive data in table 2. This pattern does not hold for earlier years, however. Those captured in 1811, for example, served six rather than twelve months more in prison than those captured the following year. Those captured earlier in the war did particularly well – being captured in 1807 led to a spell in prison just 48 days longer than being captured in 1813. Thus we can see a change in policy: initially prisoners were released, but as time went on it was more likely that they would be held for the duration of the war. Again this is line with table 2. This is

our first finding: British policy towards prisoners of war changed during the war. Initially prisoners were released after being held for perhaps a year, but for those captured from 1809 onwards, the modal (although not always majority) release date was the end of the war.

One powerful determinant of duration in captivity was the place of capture, and specifically its distance from Britain. Those who were captured far away, say in the Caribbean or in the Bay of Bengal, first had to be transferred to Britain. This created a large lag between the day when they were seized and their formal entry date into prison custody. This transit period barely reduced their time in prison having arrived. A coefficient of around 0.99 means that for every day in transit, a prisoner served 0.99 additional days in captivity, meaning that a day travelling towards the prison reduced the time in prison by just 0.01 of a day. Those in charge of prisons, who decided who to release from time to time, did not give any weight to the time spent in captivity prior to arriving in the prison itself.

Various other characteristics affected a sailor's likely stay in captivity. Compared with people in their 20s, children – defined as those aged 12 or under – were more likely to be released early, but there is little evidence of any other form of age discrimination. The coefficient on the over 50s is negative, but nowhere near statistically significant. Other definitions of seniority yield the same result. No particular compassion was given to the oldest, or to those aged 13-19.

Officers were likely to stay less long in prison, typically spending 137 days fewer in captivity, confirming the earlier mentioned preferential treatment of the officer class. The coefficient on “Other ranks” – somewhere between officers and common seamen, is negative, but it not statistically significant. Craftsmen, in contrast, typically spent 97 days more in prison –

perhaps because they were seen as useful by the authorities. Against that, age heaping, sometimes used as a measure of low human capital, has no effect. Those captured on military vessels also fared better, typically being released 110 days earlier than those with equivalent characteristics on merchant ships, and 138 days earlier than privateers with equivalent characteristics.

We can also compare the effect of different forms of exit. As we have noted, most people were simply released, but some were exchanged, some escaped, and some died. The number of prisoners exchanged was low, reflecting the post-French Revolution decline of the previous system whereby prisoners were exchanged routinely and rapidly (Daly 2004). But these prisoners were lucky, for they were imprisoned for 230 fewer days than would otherwise have been the case. This tells us something important about the exchange system: the British exchanges were real, that is, the prisoners released by the British authorities as exchanges were not those who would have been released at that point in any case.

The case for escaping seems weak. The coefficient is -155, meaning that escaping reduced the duration of imprisonment by almost half a year. It is statistically significant. What we do not know, however, is what happened to the escapees. Escaping from a prison hulk, whether by climbing over the top and jumping into the water, or sawing through the side, is one thing, finding your way home to Denmark or Norway is another. Escapees would have needed to swim to land, or seize a small boat in the vicinity of the prison ship. Even if they reached land safely, they would have spoken little English, and almost all would have had little money or other assets. It is difficult to be optimistic about their chances. Those recaptured would be put in the prison 'black hole', a room typically 6 feet square, on half rations, until the

costs of their capture had been made up from the savings on rations. They were also made ineligible for exchange (Chamberlain, 2008, p. 38).

Finally the coefficient on dying is positive, rather than negative, although it is not (quite) statistically significant. This would only occur causally if the very sick were detained for longer, perhaps being too sick to release. Although possible, this seems implausible.

The tall served (slightly) less time in prison – each extra inch was associated with 11 fewer days inside. Danes were also released more quickly than Norwegians, by 163 days. This is not a small amount, and we therefore investigate this effect further. We do so by using a Z test to assess whether the average duration of imprisonment was different for Danes and Norwegians released by the British. To that end, we exclude those who died, and those who escaped. We perform the test separately for people captured in each year, with the results reported in table 4.

Table 4. Average stay in captivity, by nationality and year of capture

	Danish			Norwegian			Z
	Mean	StDev	N	Mean	StDev	N	
1807	1,020	839	286	1,140	956	720	-1.96*
1808	831	587	445	972	669	656	-3.71***
1809	871	543	126	1,128	682	251	-3.96***
1810	778	545	77	1,183	442	201	-5.83***
1811	599	405	70	872	330	177	-5.00***
1812	454	301	25	648	240	91	-2.97**
1813	211	112	86	307	131	177	-6.10***

Notes: * = significant at 5%, ** significant at 1%, *** significant at 0.1%, one tailed test.

It is not clear why the British were more likely to release Danes than Norwegians, but it is clear that they were. The differences averaged half a year (177 days), with particular large differentials around the middle of the war.

For that reason we report the regression results for Danes and Norwegians separately in table 3. Most of the patterns found earlier for the combined group remain true. It was better to be captured early, when release was more common, or late, when war was about to end. This is particularly true for Norwegians. Danish craftsmen were in demand, but Norwegians were not: the latter's duration of captivity was no different to that of ordinary sailors. The earlier finding that those captured on military ships were more likely to be released early turned out to be a Norwegian only effect, while the longer duration of stay for privateers is driven entirely by the fortunes of Danish sailors. Finally, exchanged Danish sailors – who were more likely to be exchanged in any case – were let out about 100 days earlier than exchanged Norwegian sailors. Overall it was clearly better to be Danish, although four-fifths of the advantage is negated by being a Danish privateer. Similarly, being on board a Norwegian military ship, rather than a merchant one, overcame about half the disadvantage of being Norwegian. We could speculate as to why the British exhibited these preferences, but these differences are best left to be explored by qualitative historians.

We have already noted that the rate of death was low compared with the rates suffered by other nineteenth century prisoners of war. We now go on to investigate whether death was a random event, or whether it was predictable. We do this via regression analysis. Since dying in captivity is a binary variable – you either die or you don't – we use a probit analysis. The results are given in table 5.

Table 5. What causes death in captivity?

	<i>All</i>		<i>Danish</i>		<i>Norwegian</i>	
	<i>Coefficien</i>	<i>t-stat</i>	<i>Coefficien</i>	<i>t-stat</i>	<i>Coefficien</i>	<i>t-stat</i>
Danish	0.049	-0.59		--		--
Captured in 1809	0.341	-3.08	0.378	-1.87	0.325	-2.4
Captured in 1810	-0.021	-0.13	-0.356	-1	0.010	-0.06
Captured in 1811	0.457	-3.43	0.666	-2.74	0.393	-2.4
Captured in 1812	0.369	-1.84	0.470	-1.17	0.315	-1.35
Captured in 1813	0.265	-1.77	0.316	-1.18	0.191	-1
Days in captivity	0.000	-2.92	0.000	-1.59	0.000	-2.44
Craftsman	-0.645	-1.73		--	-0.432	-1.08
Officer	-0.038	-0.38	0.045	-0.26	-0.091	-0.72
Other ranks	0.053	-0.31	-0.193	-0.56	0.216	-1.07
Height	0.042	-2.57	0.059	-1.93	0.037	-1.88
Merchant vessel	0.136	-1.08	0.171	-0.82	0.113	-0.69
Privateer	0.284	-2.05	0.513	-2.26	0.202	-1.11
Unknown type of	0.103	-0.6	-0.042	-0.12	0.163	-0.77
Aged in 30s	0.007	-0.07	-0.024	-0.14	0.013	-0.12
Aged in 40s	0.048	-0.41	0.005	-0.02	0.057	-0.42
Aged in 50s	0.002	-0.01	0.323	-1.29	-0.145	-0.81
Aged 60 and over	-0.266	-0.62		--	-0.101	-0.23
Constant	-4.855	-4.45	-6.049	-2.96	-4.460	-3.41
Number of	3,452		984		2,416	
Adjusted R-squared	0.0375		0.0778		0.0292	

Notes: Z scores in parentheses. The omitted category is military naval sailors in their 20s. No child age sailors or sailors aged over 60 died.

The first thing to note about both regressions is that they explain (virtually) nothing. The pseudo R-squared is very close to zero: death was essentially random. This is an important finding. It rules out a large number of potential hypotheses. That the coefficient for 1809 is no higher than for 1812 suggests that the prison system worked well from the outset. We noted earlier that the number of prisoners was highest at the ends of 1808 and 1809. This could imply

that arriving into captivity in 1809 had risks: the system could be creaking at the seams, putting pressure on food supplies, and making outbreaks of contagious diseases more likely, and more deadly if they happened. Arriving when the prisons are full certainly had bad outcomes in the US civil war. Costa and Kahn (2008, pp. 125-126) record that those who arrived when the camps were already full “faced ever-worsening conditions as the crowds of prisoners increased”. The death rate was 4 percent of men captured prior to mid-1863, and 27 percent subsequent to that date. There is no such pattern in our data. This was surely in part because the numbers imprisoned did not rise over time: releases were sufficiently numerous to prevent the prisoner of war population from rising.

As we would expect, the longer you are in prison, the greater your chance of dying. The coefficient is statistically significant for the sample as a whole, and for the Norwegian subsample, but not for the (smaller) Danish subsample. This does not prove that prison was bad for you: the chance of dying increases, by definition, if the time period is longer, whether or not you are in prison. Probit coefficients are not straightforward to interpret, and for that reason we report the additional percentage chance of dying in table 6.

Table 6. The increase in the chance of dying according to the length of stay in prison

	Extra chance of dying
End of year 1	0.28%
End of year 2	0.60%
End of year 3	0.36%

Notes: these results apply to ordinary sailors on military ships, in their 20s when captured in 1808. The results would be similar for prisoners with other characteristics.

These magnitudes are small. Being in prison for three years rather than one year increased the chance that you would die by only about 1 percentage point.

The coefficient on being Danish is not significant. There is no evidence that British offered better conditions to either the Danes or the Norwegians. The coefficients on age are not statistically significant: just as sailors of all ages were effective seamen, so they were able to cope with the rigours of life in a prison hulk, whatever their age. This fits with our earlier finding that age was not a good predictor of length of stay in prison. It is neither the case that older seamen were released more quickly, nor that they were more likely to die.

Nor are the coefficients significant for different types of prisoner. Officers were neither more nor less likely to die than common sailors. This is an important result. We know that even when held on board ship, officers were given more space, and were more likely to have had supplementary income from the Danish government with which to supplement their provisions. The fact that they were no less likely to die implies that the unsupplemented provisions for common sailors were sufficient to prevent any dangerous declines in health.

Taller sailors were slightly more likely to die, a pattern found elsewhere.^{##} It seems plausible that, as in later prisoner of war situations, equal rations for all meant that the largest were most vulnerable.

Seamen who were captured on privateers were more likely to die than those captured on formal military vessels. The privateer coefficient is statistically significant on both the overall

^{##} "The small thin man always stood the best chance." Beevor (1999, chapter 24), describing the experience of German prisoners after the battle of Stalingrad.

and Danish only regressions. A prisoner captured in 1808, aged in his 20s, had a 2.8 per cent chance of dying if he was captured on a military vessel, and a 5.2 per cent chance of dying if he was captured on a privateer. If we restrict our attention to the Danish sub-sample, the figures are 2.4 per cent and 7.2 per cent. These are not small differences. There is evidence, therefore, that privateers did badly in prison. The previous regression showed that privateers – and particularly Danish privateers – were likely to serve a longer term in prison than those who were captured from military vessels. This suggests that the prison authorities did not view them with favour, and this may have increased their chance of dying. This could have come about either because they were treated less favourably in the allocation of rations, or because other prisoners were less likely to be punished if they treated privateer prisoners less well.

Taken as a whole, the finding that death rates were low, and that, with the exception of the higher mortality rate for privateers, that deaths were essentially random, implying that conditions were overwhelmingly reasonable, and fair. This is a historically important finding. It certainly makes it hard to sustain the idea that prison hulks were ‘floating tombs.’

8. Conclusion

This article investigates the fortunes of the Danish and Norwegian sailors, military and merchant, captured by the British in the Napoleonic era. Specifically, it seeks to explain the duration of imprisonment, and the chances of dying.

We find that it is possible to explain a considerable proportion of the variation in the duration in prison. Those captured early were often released, whereas policy changed in the

middle of the war, and releases became much less common. For that reason, duration of imprisonment was lower for prisoners captured early (before the policy change), or later (just before the end of the war), rather than in the middle of the war. Similarly, it was better to be captured close to England: the long journey as a captive from the Bay of Bengal did not reduce the time for which you were imprisoned on arrival.

As expected, being an officer reduced the time spent in prison, as did being Danish. Against that, (Danish but not Norwegian) craftsmen were held for longer than regular seamen. Being exchanged reduced time in prison, showing that those exchanged were genuine: these were not people who would have been released in any case. Excepting young children, age had no effect.

In contrast, it is not possible to explain death to any extent. That is in itself important: that the death rates were both low and (nearly) random tells us that conditions were reasonable. The survival strategies documented by Costa and Kahn, for example, were simply not necessary. You did not need to be on a prison ship with others from your unit, or your home town to survive. The only group for whom survival was less assured were privateers. They were about twice as likely to die as other sailors, with an even greater chance of death for Danish privateers. That said, the death rate for this group was still only 7 per cent, a low rate for people whose period of imprisonment was typically approaching three years.

The rations, fine on paper, appear to have been adequate in practice. Other conditions, relating to health, appear also to have been adequate. Serious violence at least was not endemic. Death was, as a result, rare. We conclude that the prison regime run by British

authorities during the Napoleonic Wars was, taken as a whole, as good as might reasonably be expected in this era. Descriptions such as “floating tombs” are unwarranted.

We found that, as in so many wars, not all prisoners were treated equally. This was true by the Danish authorities – who sent different levels of support for different categories of prisoner. It was also true in terms of how the British treated their prisoners. These differences should not be overstated: death rates were not much different. What varied was the chance of exchange. Officers – even those captured more than once, those captured at the start of the war and younger children more likely to be released after a shorter time in captivity. Privateers were least likely to be exchanged. The British appear to have exercised some moral judgements as to who to favour with release.

The qualitative evidence suggests that Danish and Norwegian officers were much better treated than common seamen. They received a greater allowance from their home country, and their freedom was much less restricted than the common seamen. Nonetheless, the quantitative assessment does indicate that the difference in treatment according to rank was small enough not to have had an impact on the rate of survival. This result supports the notion by Feldbæk, Roos, and Johnsen that all the Danes and Norwegians actually fared reasonably well in captivity, even if trusted prisoners in the prison hulks, and the officers housed in the English countryside all enjoyed a substantially greater freedom and welfare.

A prison hulk will never have a great reputation as a place of incarceration, nor should it. But there were previously, contemporaneously, and subsequently, far worse places to have been held as a prisoner of war. Confinement on board a British prison hulk was a surprisingly gentle experience for captured Danish and Norwegian sailors.

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Appendix

Stata codes:

```
regress Days_in_captivity Height danish C1807 C1808 C1809 C1810 C1811 C1812  
Days_between_capture_and_custody Craftsman Officer other Military_Navy Privateer  
unknown_vessel_type English_vessel seized_on_land exchanged escaped died A12andless A13  
A14 A15 A16 A17 A18 A19 A30s A40s A50plus Hx05 if transferred ==0 & C1814==0
```

```
regress Days_in_captivity Height danish C1807 C1808 C1809 C1810 C1811 C1812  
Days_between_capture_and_custody Craftsman Officer other Military_Navy Privateer  
unknown_vessel_type English_vessel seized_on_land exchanged escaped died A12andless A13  
A14 A15 A16 A17 A18 A19 A30s A40s A50plus Hx05 if transferred ==0 & C1814==0 & danish
```

```
regress Days_in_captivity Height danish C1807 C1808 C1809 C1810 C1811 C1812  
Days_between_capture_and_custody Craftsman Officer other Military_Navy Privateer  
unknown_vessel_type English_vessel seized_on_land exchanged escaped died A12andless A13  
A14 A15 A16 A17 A18 A19 A30s A40s A50plus Hx05 if transferred ==0 & C1814==0 & danish==0
```

```
probit died Days_in_captivity A30s A40s A50s A60_ Height Craftsman Officer other Merchant  
Privateer unknown_vessel_type danish C1809 C1810 C1811 C1812 C1813 if A20andover  
probit died Days_in_captivity A30s A40s A50s A60_ Height Craftsman Officer other Merchant  
Privateer unknown_vessel_type danish C1809 C1810 C1811 C1812 C1813 if A20andover &  
danish
```

```
probit died Days_in_captivity A30s A40s A50s A60_ Height Craftsman Officer other Merchant  
Privateer unknown_vessel_type danish C1809 C1810 C1811 C1812 C1813 if A20andover &  
danish==0
```

```
mean(Height) if A20andover
```

```
* gives 65.66871
```

```
mean(danish) if A20andover
```

```
* gives 0.3415099
```

*takes the regression for all obs and inserts mean Height, mean Danish variables, and the relevant number of days, to work out effect of being on the hulk for another year

*assumes captured in 1808, seaman, military ship

```
display -4.854959+ .0419273*65.66871+ .0490206 *0.3415099+ 0.0001609*365*0
```

* gives -2.0849063

```
display -4.854959+ .0419273*65.66871+ .0490206 *0.3415099+ 0.0001609*365*1
```

* gives -2.0261778

```
display -4.854959+ .0419273*65.66871+ .0490206 *0.3415099+ 0.0001609*365*2
```

* gives -1.9674493

```
display -4.854959+ .0419273*65.66871+ .0490206 *0.3415099+ 0.0001609*365*3
```

* gives -1.9087208

```
display normal(-2.0849063)
```

* gives .0185389

```
display normal(-2.0261778)
```

* gives .02137328

```
display normal(-1.9674493)
```

* gives .02456572

```
display normal(-1.9087208)
```

*gives .02814906

*to get the change in the chance of dying, do a subtraction of the results of the display normal.

*0 to 1:

```
display (normal(-2.0261778) - normal(-2.0849063))
```

*1 to 2

```
display (normal(-2.0849063) - normal(-1.9674493))
```

*2 to 3

```
display (normal(-1.9674493) - normal(-1.9087208))
```

*nb a result of 0.001 means 0.1%

* Now does likewise to find effect of privateer variable, on all, and then on Danes.

* Assumptions as per last, assumes 3 year stay

* ALL sailors:

display -4.854959+ .0419273*65.66871+ .0490206 *0.3415099+ 0.0001609*365*3

display normal(-1.9087208)

* gives .02814906, i.e. 2.8% chance of a military ship sailor dying

display -4.854959+ .0419273*65.66871+ .0490206 *0.3415099+ 0.0001609*365*3 +
0.2841024

display normal(-1.6246184)

* gives .05212195 - i.e. a ~5% chance of death for privateers

display (normal(-1.6246184) - normal(-1.9087208))

* gives .02397289, i.e. a 2.4 %pp increase in death rate for privateers cf military sailors.

* Danes only:

display -6.048599 + .0590138 *65.66871 + .0001799 * 365 *3

* gives -1.9762484

. display normal(-1.9762484)

* gives .02406333, i.e. 2.4% chance of military sailors dying

. display -6.048599 + .0590138 *65.66871 + .0001799 * 365 *3 + .5130807

* gives -1.4631677

. display normal(-1.4631677)

* gives .07171075, i.e a ~7% chance of privateer sailor dying

. display (normal(-1.4631677) - normal(-1.9762484))

* gives .04764742, i.e. a 4.8%pp increase in death rate for privateers cf military sailors